

polymerase, Thermotoga maritima DNA polymerase, Thermococcus litoralis DNA polymerase, and

Pyrococcus GB-D DNA polymerase, and the second DNA polymerase is selected from the group consisting of Thermus aquaticus DNA polymerase, (exo-)

- 5 Thermococcus litoralis DNA polymerase, (exo-) Pyrococcus furiosus DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.

IN THE CLAIMS:

Please cancel claims 1, 2, 5, 14, 15, and 16, and add new claims 17-36 as follows:

17. (new) A kit for the synthesis of a polynucleotide, said kit comprising:
(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of *Archaeobacterial* DNA polymerases, and

5 (b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of thermostable DNA polymerases lacking 3'-5' exonuclease activity.

18. (new) A kit according to claim 3, wherein said *Thermus aquaticus* DNA polymerase is selected from the group consisting of wild-type *Thermus aquaticus* DNA polymerase and N-terminal deleted forms of the same enzyme.

19. (new) A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising

(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of *Archaeobacterial* DNA polymerases, and

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(b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of thermostable DNA polymerases lacking 3'-5' exonuclease activity.

20. (new) A method according to claim 6, wherein said first DNA polymerase comprises *Pyrococcus furiosus* DNA polymerase.

21. (new) A method of claim 7, wherein said *Thermus aquaticus* DNA polymerase is selected from the group consisting of wild-type *Thermus aquaticus* DNA polymerase and N-terminal deleted forms of the same enzyme.

22. (new) A method according to claim 7, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

23. (new) A method according to claim 21, wherein said *Thermus aquaticus* DNA polymerase comprises Klentaq1 DNA polymerase.

24. (new) A method according to claim 20, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

25. (new) A method according to claim 20, wherein said second DNA polymerase comprises Klentaq1 DNA polymerase.

26. (new) A method according to claim 6, wherein said first DNA polymerase comprises Vent DNA polymerase.

27. (new) A method according to claim 26, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

28. (new) A method according to claim 26, wherein said second DNA polymerase comprises Klentaq1 DNA polymerase.

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29. (new) A kit according to claim 3, wherein said first DNA polymerase comprises *Pyrococcus furiosus* DNA polymerase.
30. (new) A kit according to claim 3, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.
31. (new) A kit according to claim 18, wherein said *Thermus aquaticus* DNA polymerase comprises Klentaq1 DNA polymerase.
32. (new) A kit according to claim 11, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.
33. (new) A kit according to claim 11, wherein said second DNA polymerase comprises Klentaq1 DNA polymerase.
34. (new) A kit according to claim 3, wherein said first DNA polymerase comprises Vent DNA polymerase.
35. (new) A kit according to claim 34, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.
36. (new) A kit according to claim 34, wherein said second DNA polymerase comprises Klentaq1 DNA polymerase.
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10/10/2006